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Exposure Pathway Assessment and Human Health Risk Assessment Scope of Work

Former International Light Metals Facility

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12 August 1999

PREPARED FOR

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1. Introduction

The purpose of this document is to evaluate current physical and chemical groundwater conditions at the former International Light Metals (ILM) facility, and to evaluate the potential for complete exposure pathways for human exposure to chemicals in groundwater. Additionally, this document provides a scope of work for a Health Risk Assessment (HRA) to estimate the potential human health risks for potentially complete exposure pathways associated with the Site. A brief discussion of the site conditions is initially presented below to form the basis of the exposure pathway assessment.

1.1 Site Description

The Site is located in Torrance, California and is comprised of approximately 67.7 acres of land that is currently being used for warehousing and distribution or is undeveloped. The majority of the Site is either paved, landscaped, or covered with buildings. The northern portion of the Site is currently unpaved, but is planned for development in a manner consistent with the current use (ARCADIS Geraghty & Miller 1999a). Former metal processing operations at the Site are believed to be the source of contaminant releases to the soil and groundwater. No disposal of wastes has historically occurred at the Site. Releases of chemicals to soil and groundwater occurred during former operations by leakage from underground storage tanks (USTs), aboveground storage tanks (ASTs), degreasers, sumps, process equipment, and incidental surface spills at process storage areas (ARCADIS Geraghty & Miller 1999a).

1.2 Site Characterization

Soil remediation took place during 1996 and 1997, and included excavation and soil vapor extraction. Health-protective levels were attained as part of remediation. A no further action decision for soil was granted for the Site by the California Department of Toxic Substances Control (DTSC) on August 25, 1997. Potential exposure to chemicals in soil is not likely a complete exposure pathway at the Site, and any residual levels of chemicals in soil are protective of human health. Thus, this document is devoted exclusively to evaluating risks associated with site-related chemicals in groundwater.

1.2.1 Hydrogeologic Conditions

The first occurrence of groundwater is generally found within a sand layer at depths ranging from 65 to 75 feet below ground surface (bgs) (ARCADIS Geraghty & Miller 1999b). This shallow groundwater unit is part of the Bellflower aquitard. Groundwater flow within the Bellflower aquitard in the area of the Site is generally to the southeast (ARCADIS Geraghty & Miller 1999b). Groundwater beneath most of the site is perched on a unit designated the First Saturated Clay (FS Clay), located at a depth ranging from 69 to 83 feet below ground surface. This perched groundwater is apparently continuous with deeper groundwater of the Bellflower aquitard beneath the Site. The bottom of the Bellflower aquitard in the area of the Site is marked by a continuous 10- to 21-foot-thick silt and clay layer located 98 to 119 feet beneath the Site which tends to retard downward migration of groundwater from the Bellflower aquitard to the deeper Gage, Lynwood, and Silverado Aquifers (ARCADIS Geraghty & Miller 1999a). Two deep borings (DB-1 and DB-2) were installed at the Site in 1996 that extended through the Bellflower aquitard and the silt/clay layer into the underlying Gage aquifer and the El Segundo aquitard. Although no samples were collected from these borings for chemical analyses, these borings confirmed the presence of these hydrogeologic features beneath the Site (ARCADIS Geraghty & Miller 1996).

1.2.2 Groundwater Characterization

Between 1995 and 1999, 25 groundwater monitoring wells have been used to characterize on-site groundwater conditions. The most recent groundwater monitoring was conducted in March 1999 for 14 on-site wells and for 8 wells installed in February 1999 on the adjacent Boeing Realty Corporation (BRC) property. A summary of the most recent groundwater chemistry with respect to the primary chemicals of potential concern (COPCs) is presented below.

Based on frequency of detection and the magnitude of detected concentrations, trichloroethene (TCE) is the primary COPC in groundwater samples collected in March 1999 from the Bellflower aquitard. TCE concentrations range from 0.7 to 8,100 micrograms per liter (µg/L) in on-site samples and from 4.1 to 6,700 µg/L in off-site samples. The two highest TCE concentrations were found in groundwater monitoring wells located at the middle of the eastern Site boundary.

The next most frequently detected organic compound in the Bellflower aquitard was tetrachloroethene (PCE), which was detected at concentrations ranging from not detected (ND) to 270 µg/L on-site and ND to 73 µg/L off-site. Additionally, hexavalent chromium was detected at a maximum concentration of 1,280 µg/L in March 1999. Other chemical groups that have historically been detected in Site groundwater include total petroleum hydrocarbons (TPH), semi-volatile organic compounds (SVOCs), dioxins and furans, and various metals. Summary tables of all groundwater chemical analyses conducted between 1995 and 1999 were provided in the March 1999 Groundwater Monitoring and Off-site Well Installation Report (ARCADIS Geraghty & Miller 1999b).

1.2.3 Regional Groundwater Impacts

Several facilities in the vicinity of the Site have impacted the regional groundwater quality. These sites include the Boeing Realty Corporation property (former operations) to the east, the former Montrose chemical site located to the southeast, the Capitol Metals facility located to the south, and the Allied Signal facility to the southwest. COPCs identified at these surrounding facilities include benzene, chlorinated volatile organic compounds (VOCs) (such as TCE and PCE), metals, pesticides, polychlorinated biphenyls (PCBs) and TPH.

2. Exposure Pathway Assessment

Exposure pathways describe the mechanisms by which an individual may contact a chemical in the environment. Each exposure pathway represents a discrete route through which uptake of a chemical to the body may occur. Although many potential exposure pathways exist under a given set of environmental conditions, only a few are expected to be complete based on the physical characteristics of the Site, the physical and chemical properties of the COPCs, and reasonable predicted use of the site-related resources. Evaluation of potentially complete exposure pathways is an initial step in the risk assessment process. If a pathway is incomplete, there is no potential for exposure to the chemical, and therefore, no risk of adverse effects exists under the conditions evaluated.

As discussed previously, the results of the exposure pathway assessment form the basis for the HRA scope of work. This section provides a brief description of the on- and off-site conditions that influence the potential for complete exposure pathways associated with the Site.

2.1 Groundwater Supply Wells

In this section, the current and potential uses of the water-bearing units beneath the Site are reviewed to gain an understanding of the potential exposure scenarios that may be possible under current and future Site conditions. Additionally, this section provides a review of a water supply well survey conducted in 1995 and updated in 1998. The results of this survey were used to determine if groundwater in the Site vicinity is currently extracted for beneficial uses, or has the potential to be extracted and used in the future.

The Bellflower aquitard groundwater currently has no beneficial uses. According to Mr. David Hung of the Regional Water Quality Control Board (RWQCB), it is not likely that any groundwater in the area of the Site is currently extracted for drinking water use, although it is extracted from the Gage Aquifer at the Mobil refinery (located approximately 2,500 feet west of the Site) and used for industrial purposes after treatment (Hung 1995, 1999). Groundwater in the Silverado Aquifer is used to augment the drinking water supply for the City of Torrance and the nearby cities of Carson and Gardena (ARCADIS Geraghty & Miller 1999a).

A water well survey completed in 1995 identified two active groundwater supply wells located within a 0.5-mile radius of the Site (Table 1) (Geraghty & Miller 1996). These wells are designated as State wells 4S/14W-01F02 and 4S/14W-01F03, reportedly owned by Douglas Aircraft Co. and Aluminum Co. of America, respectively. Both of these wells are located east of the former ILM facility, are drilled to total depths of approximately 600 feet, are screened at depths in excess of 400 feet, and supply water for industrial uses. In addition to the beneficial uses described above, groundwater from the Gage aquifer is extracted and treated at the Unocal Site located approximately 2,500 feet west of the former ILM Site. There are several other wells which are reported to exist within a 0.5-mile radius of the Site (Geraghty & Miller 1996). The status of most of these wells is unknown (Table 1).

In addition to the wells described above, the water well survey identified 27 active water-supply wells within a 2-mile radius of the Site (Table 2) (Geraghty & Miller 1996). Only two of these wells are located south or southeast of the Site (i.e., in the downgradient direction). One is owned by General Petroleum Co. (251 feet deep) and the other is owned by the Dominguez Water Corp. (1,701 feet deep) and has not been used since 1963. Based on well construction information available (Table 2), both are completed below the Bellflower Aquitard.

2.2 Potential Receptor Populations

A warehousing facility was constructed on the Site in 1998. Hence, the Site will be used for commercial purposes for the foreseeable future. Potential on-site receptor populations are therefore expected to be limited to commercial adult workers.

Consistent with the groundwater uses described above, off-site receptors could potentially be exposed to site-related COPCs in groundwater that is pumped for municipal, industrial, domestic, or irrigation purposes. Therefore, potential offsite receptors include child and adult residents and adult commercial, industrial, and agricultural workers.

Groundwater from the Bellflower Aquiclude does not discharge to the surface in the vicinity of (or within at least 1 mile of) the Site. Therefore, there are no populations at risk of direct contact via exposure to surface waters.

2.3 Exposure Pathways

Although several potentially complete exposure pathways exist between the receptor populations described above and the impacted groundwater beneath the Site, only a few are expected to be complete. This section provides a discussion of each potentially complete exposure pathway that is anticipated to occur at the Site, and provides a qualitative discussion of the relative magnitude of each type of exposure.

Uptake of chemicals may occur when groundwater is ingested, or when absorbed through the skin through direct contact with groundwater. Additionally, chemicals in groundwater may volatilize (i.e. evaporate) from the groundwater as vapor and be subsequently inhaled. Volatilization of chemicals in groundwater can occur in several ways. In one case, chemicals may evaporate directly off of the groundwater table, migrate through the soil column and be released through the ground surface to indoor or outdoor air space. Inhalation exposure may also occur as chemicals volatilize from water that has been extracted for beneficial use (e.g., during showering, watering of crops, or during industrial processes).

Direct contact exposures (i.e., ingestion and dermal contact) at the Site can only occur after groundwater has been extracted. Because there are currently no groundwater extraction wells on-Site, these exposure pathways are not complete for on-Site workers under current conditions. However, there are several points where groundwater is being extracted off-Site for municipal, industrial, domestic, and irrigation uses. Migration of groundwater to these points is possible. For these reasons, future potential direct exposure to impacted groundwater cannot be ruled out, and this exposure pathway is considered potentially complete.

Inhalation exposures may occur as a result of evaporation of volatile constituents from the groundwater table or from extracted groundwater as it is being used. The depth to groundwater at and in the vicinity of the Site will tend to reduce the flux of volatile constituents from the water table and through the ground surface. In addition, the primary driving mechanism to bring constituents through the soil void spaces is diffusion, which is exceptionally slow even if attenuation (i.e., biodegradation and adsorption to soil) is not considered. Therefore, this potential exposure pathway is not considered complete. However, as offsite migration of impacted groundwater may result in domestic use, inhalation exposure (such as during showering) could be a potentially complete pathway. Therefore, this pathway will be analyzed.

2.4 Summary

The results of this assessment indicate that potentially complete exposure pathways exist for on- and off-site receptors. The potentially complete exposure pathways identified in this assessment include:

- Inhalation of chemical vapors emitted from extracted groundwater; and
- Ingestion and direct contact with site-related chemicals in groundwater extracted for municipal, industrial, domestic, or irrigation use.

The potential receptor populations for these exposure pathways include:

- Child and adult residents; and
- Adult commercial, industrial, and agricultural workers.

These exposure pathways and receptor populations require further evaluation.

3. Human Health Risk Assessment Scope of Work

This section provides a generalized work plan for assessment of potential human health risks associated with each potentially complete exposure pathway at the Site. This section presents a series of tasks that will be implemented to address these potentially complete exposure pathways. All tasks identified within this work plan will be conducted in accordance with DTSC (1992, 1995) and United States Environmental Protection Agency (USEPA) (1989, 1999) guidance.

3.1 Task 1 – Chemicals of Concern Selection

The first task of the HRA for the Site will be to select COPCs. COPCs will be selected using the analytical data for the four previous groundwater monitoring events, providing that these data provide adequate spatial representation of the Site, and address the full analytical suite identified for the Site. Following USEPA (1989) and DTSC (1992) guidance, COPCs will be selected using a step-wise screening process to focus the assessment on those chemicals that are most likely to contribute to significant human health risks at the Site. Some or all of the following criteria may be used to select COPCs.

- Detection
- Frequency of detection
- Background comparison
- Comparison to USEPA Maximum Contaminant Levels (MCLs)
- Artifacts of sampling and analysis
- Concentration-Toxicity Screen
- Data validation results

3.2 Task 2 – Groundwater Modeling

Analytical groundwater modeling will be performed to estimate exposure point concentrations. Concentrations of all COPCs will be modeled to determine the point at which USEPA MCLs are attained. The analytical modeling will include using site-specific hydrogeological data, chemical-specific attenuation and degradation parameters, and standard groundwater flow and chemical retardation equations. Because of the complexity of the Bellflower Aquitard, it is not anticipated that computer modeling of groundwater flow (i.e., using Modflow or another program) would be more useful than simplified analytical analysis.

3.3 Task 3 – Toxicity Assessment

Toxicity criteria for COPCs (i.e., noncancer references doses [RfD] and cancer slope factors [CSF]) will be compiled from the available guidance (DTSC 1995; and the USEPA Integrated Risk Information System) and used to evaluate the potential health risks associated with all COPCs.

3.4 Task 4 – Exposure Assessment

Exposure assessment is the process of evaluating site conditions and receptor activity patterns to derive estimates of exposure to chemicals in the environment. Included in the exposure assessment are the following components:

- Identification of potentially exposed populations;
- Identification of plausible exposure scenarios;
- Presentation of exposure parameters;
- Estimation of exposure point concentrations;
- Description of fate and transport modeling (i.e., groundwater and vapor); and
- Dose estimation.

The first two steps (i.e., identification of populations and pathways) have already been performed as discussed in Section 2.0. Further characterization of the populations is not necessary because all of the potential exposure scenarios are future hypothetical scenarios. It is anticipated that the maximally exposed receptors at and in the vicinity of the Site are commercial workers and residential users of groundwater containing Site-related chemicals.

Standard exposure parameters published by the USEPA (1999), ASTM (1995), and the DTSC (1992) are proposed to initially characterize exposure in the HRA. The exposure pathways that require further evaluation are the inhalation of chemical vapors emitted from extracted groundwater, and potential ingestion and dermal contact with extracted groundwater. Doses will be estimated using USEPA (1989) and DTSC (1992) guidance.

3.5 Task 5 – Risk Characterization

The purpose of the Risk Characterization is to provide quantitative and qualitative estimates of the potential health risks posed to receptor populations associated with estimated exposure to chemicals in environmental media. The hazard quotient and point-estimate approaches for characterizing non-carcinogenic and carcinogenic health effects are described below. Predicted risks will be compared to standard benchmarks that represent risk levels of regulatory concern. In addition, for those conditions predicted to pose a potential unacceptable risk, a summary will be constructed to readily identify the chemical(s) and source area(s) that contribute most significantly to the estimated risk.

3.5.1 Potential Adverse Non-Cancer Health Effects

Potential adverse non-cancer health effects are evaluated by comparing a predicted dose to an appropriate reference criterion. Because the majority of non-cancer health effects occur only after a threshold dose is reached, regulatory agencies have established RfDs below which adverse effects are not expected to occur, even in sensitive individuals. If the predicted average daily dose (ADD) is below the RfD, then the estimated dose would not be expected to pose a significant health hazard. The hazard quotient (HQ) is the ratio of the chemical-specific average daily dose to the RfD and the hazard index (HI) is the sum of the chemical-specific HQs using the following equations:

$$HQ = ADD/RfD$$
$$HI = \Sigma HQ$$

Under current USEPA policy where individual chemicals potentially act on the same target organ or result in the same health endpoint, the cumulative effect of exposures to multiple chemicals should be addressed (USEPA 1989). For this evaluation, pathway-specific hazard quotients will be summed to arrive at a hazard index, regardless of the endpoint that each chemical acts upon. This will insure that conservative, and health-protective estimates of the potential for adverse non-cancer health effects are developed. If a hazard quotient greater that 1 is calculated, the refined calculation based on similar target organs will be performed. Tables will be provided that present both the chemical-specific hazard quotients, and pathway- and receptor-specific hazard indices. This presentation will allow for rapid identification of those COPCs and pathways that contribute the most to the predicted health hazards on-site.

3.5.2 Potential Incremental Cancer Risks

Cancer risks are defined as the incremental probability of an individual developing cancer as a result of exposure to a given chemical at a given concentration. Cancer risk estimates are derived by multiplying the lifetime average daily dose (LADD) and the CSF to arrive at a probability of developing cancer as a result of exposure to one chemical. Cancer risk estimates will be presented by pathway and by receptor to allow for rapid recognition of those COPCs and pathways that contribute most significantly to the predicted cancer risks. This section of the Risk Characterization will relate the predicted risk levels associated with exposure at the Site to levels that are typically considered acceptable by regulatory agencies.

3.6 Uncertainty Assessment

A qualitative uncertainty assessment will be performed to identify the factors that contribute the greatest amount of uncertainty to the risk assessment. The uncertainty assessment will include a discussion of assumptions used in the fate and transport evaluation, and the effect of those assumptions on the results of the risk assessment. A sensitivity analysis will also be performed to quantify the magnitude of any major assumptions used in the fate and transport evaluation. The uncertainty assessment section will also describe the underlying assumptions of the risk assessment process and the effect that those assumptions has on the risk estimates derived.

4. Closing

The work will be performed according to the most recent project schedule submitted to the DTSC, which includes submitting a Draft HRA on November 9, 1999. If you have any questions or concerns regarding this scope of work, please call either of the undersigned at (714) 278-0992. Thank you.

5. References

American Society for Testing and Materials. 1995. Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites. Designation E 1739-95.

ARCADIS Geraghty & Miller. 1999a. Current Conditions Report – Former International Light Metals Facility 19200 South Western Avenue Torrance, California. Prepared for Lockheed Martin Corp. 2 April 1999.

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USEPA. 1989. Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA 540/1-89/002.

USEPA. 1999. Exposure Factors Handbook. Office of Research and Development. EPA/600/C-99/001. February.

TABLES

Tables

Table 1. Offsite Groundwater Extraction Wells Within 0.5 Miles of Former ILM Facility, Lockheed Martin Corporation, Torrance, California

State Well Name	Owner	Well Use	Direction Relative to Site	Depth (ft. bgs.)	Depth to Top of Screen (ft. bgs)	Depth to Bottom of Screen (ft. bgs.)	Date Installed	Last Used	Fate
NA	T. H. Wright	NA	NW	NA	NA	NA	NA	12/21/61	Covered, Not Destroyed
NA	General Petroluem Co.	NA	W	NA	NA	NA	1909	1912	Not Used Since
3S/14W-36E01	Ms. Francis A. Corwin	Domestic	N	163	NA	NA	1903	1930	Not Used Since
NA	Jack and Betty Ordway	NA	NW	NA	NA	NA	1910	NA	NA
3S/14W-35J01	Hugh Cameron	NA	N	NA	NA	NA	1904	NA	NA
3S/14W-36L01	H. T. Jorgensen	NA	NE	270	NA	NA	NA	01/47	Not Used Since
3S/14W-36L02	F. A. Conover	Irrigation	NE	NA	NA	NA	1905	NA	NA
NA	H. W. Douglas	NA	N	45	NA	NA	1921	1929	Not Used Since
4S/14W-01H01	Aluminum Co. of Amer.	NA	E	600	473	514	10/42	NA	NA
4S/14W-01F02	Douglas Aircraft	Industrial Supply	E	600	477 - 535	506 - 540	10/42	Active	Active
4S/14W-01F03	Aluminum Co. of Amer.	Industrial Supply	E	600	427 - 538	433 - 550	08/42	Active	Active
3S/14W-36N02	John Zurlite	NA	NE	NA	NA	NA	NA	1947	Abandoned
3S/14W-36K03	Barnett Ranch	NA	NE	234	NA	NA	1900	NA	Abandoned
NA	O. C. Miller	NA	NE	NA	NA	NA	NA	1947	Not Used Since
NA	E. J. Wait	NA	NE	NA	NA	NA	NA	1947	Not Used Since
NA	F. C. Irvine	NA	NE	572	471, 505	479, 528	03/49	NA	NA
3S/14W-36Q??	M. E. Woods	NA	E	702	NA	NA	NA	NA	NA
NA	Montrose	NA	SE	NA	NA	NA	NA	NA	NA
NA	Montrose	NA	SE	98.8	NA	NA	9/22/89	NA	NA
NA	Montrose	NA	SE	99.3	NA	NA	9/16/89	NA	NA
NA	Montrose	NA	SE	97.3	NA	NA	9/12/89	NA	NA
16	Allied Signal	NA	S	NA	NA	NA	Appr. 6/13/95	NA	NA
17	Allied Signal	NA	S	NA	NA	NA	Appr. 6/13/95	NA	NA
NA	Mobil	NA	SW	200	145	200	Appr. 9/12/79	In Service	In Service
NA	Mobil	Dewatering GW Table	W	170	80, 160	150, 165	5/14/90	NA	NA
NA	Mobil	Dewatering GW Table	W	160	74, 150	145, 155	5/17/90	NA	NA
NA	Mobil	Dewatering GW Table	W	155	65, 145	140, 150	6/1/90	NA	NA
NA	Mobil	Dewatering GW Table	W	160	65, 150	145, 155	5/20/90	NA	NA
NA	Mobil	Dewatering GW Table	SW	159	74, 149	144, 154	5/25/90	NA	NA
NA	Mobil	Dewatering GW Table	NA	560	290	550	7/1/87	NA	NA
NA	Mobil	Dewatering GW Table	W	650	260, 545	380, 640	7/18/87	NA	NA

NA - Not Available

[1] Geraghty & Miller, Inc. 1996. Draft groundwater data assessement report RCRA facility investigation Lockheed Martin Corporation International Light Metals Facility Torrance, CA. Volume I. May, 1996.

Table 2. Active Groundwater Extraction Wells Within 2 Miles of Former ILM Facility, Lockheed Martin Corporation, Torrance, California

State Well Name	Owner	Well Use	Direction Relative to Site	Depth (ft. bgs.)	Depth to Top of Screen (ft. bgs)	Depth to Bottom of Screen (ft. bgs.)	Date Installed	Active
3S/14W-34N04	SCE	NA	NW	236	168, 194	184, 200	12/18/53	Y (1995)
4S/14W-10D02	Dominguez Water Corp.	Municipal (Public Supply)	SW	800	300	800	NA	N (1994) Y (1995)
4S/14W-10D03	Dominguez Water Corp.	Domestic	SW	560	285 - 531 [a]	296 - 542 [a]	7/3/68	Y (1995)
3S/14W-34C02	City of Torrance	Municipal (Public Supply)	NW	810	200	786	1965	Y (1995)
3S/14W-34B02	SCE	Industrial Supply	NW	485	196	337	1929	Y (1995)
4S/14W-03L04	Mobil	NA	W	454	124	448	06/42	Y (1995)
4S/14W-10K02	City of Torrance	Municipal (Public Supply)	SW	812	180	812	1965	Y (1995)
4S/14W-10K03	City of Torrance	Municipal (Public Supply)	SW	816	210	786	NA	Y (1995)
3S/14W-35M07	Garrett Corp.	Irrigation	NW	324	292	321	5/15/64	Y (1995)
3S/14W-25N02	A.D. Seaback	Irrigation	N	205	NA	NA	07/36	N (1994) Y (1995)
3S/14W-25P04	So. Cal. Water Co.	Municipal (Public Supply)	N	751	544 - 699 [a]	555 - 734 [a]	3/25/48	Y (1995)
4S/14W-01F02	Douglas Aircraft Co.	Industrial Supply	E	600	477 - 535 [a]	506 - 540 [a]	10/42	N (1994) Y (1995)
4S/14W-01F03	Aluminum Co. of Amer.	Industrial Supply	E	600	427 - 538 [a]	433 - 550 [a]	08/42	N (1994) Y (1995)
4S/13W-19B01	General Petroluem Co.	NA	SE	251	212	245	1922	Y (1995)
3S/13W-29E03	H.W. Abernathy	Domestic	NE	72	NA	NA	NA	Y (1995)
3S/13W-30J01	Hansen Enterprises	NA	NE	743	355 - 658 [a]	365 - 707 [a]	10/95	(1994) Y (1995) [b]
3S/13W-30J05	C.F. Johnson	Domestic and Irrigation	NE	156	135	142	3/15/37	Y (1995)
3S/14W-26J01	Mrs. E. V. Kuapa	Domestic	NW	231	NA	NA	4/10/05	Y (1995) [c]
4S/14W-10D4	Dominguez Water Corp.	Municipal (Public Supply)	SW	600	312, 462	353, 556	1969	Y (1995)
4S/14W-03L02	Mobil	Industrial Supply	W	450	130	450	04/38	Y (1995)
4S/14W-03L03	Mobil	Industrial Supply	W	450	130	450	04/40	Y (1995)
4S/14W-10J01	City of Torrance	Municipal (Public Supply)	SW	623	170, 360	320, 520	12/14/35	Y (1994) N (1995)
4S/14W-3M01	Mobil	Industrial Supply	W	NA	NA	NA	NA	Y (1994) N (1995)
3S/14W-25K06	Mayflower Nursery	Municipal (Public Supply)	N	120	112	120	1947	Y (1994) N (1995)
4S/13W-17D01	Dominguez Water Corp.	Not used since 12/18/63	SE	1701	504 - 635 [a]	511 - 660 [a]	6/26/16	Y (1994) N (1995)
3S/13W-31M01	Maxwell Ziegler	Domestic and Irrigation	NE	664	550, 638	574, 644	01/49	Y (1994) N (1995)
3S/13W-31B07	Clark and Grace Day	NA	NE	384	365	370	8/28/48	Y (1994) N (1995)

NA - Not Available
Y - Yes N - No
[a] There are numerous unique perforation upper and lower limits. Shown is the range of upper perf. and lower perf.
[b] Abandoned
[c] Monitored
[1] Geraghty & Miller, Inc. 1996. Draft groundwater data assessement report RCRA facility investigation Lockheed Martin Corporation International Light Metals Facility Torrance, CA. Volume I. May, 1996.